

New Jersey
Nonpoint Source and Stormwater Management Program Plan
December, 2000

Introduction

Over the past twenty-five years, New Jersey – led by the Department of Environmental Protection (NJDEP) – has made significant progress in protecting and restoring the physical, chemical and biological integrity of our State's waters. Much of that progress is attributable to efforts to control pollution from industrial and municipal wastewater treatment facilities. However, persistent issues remain, including nonpoint source pollution, headwaters destruction, air deposition of pollutants to waterways and habitat degradation. Today's problems require more creative, comprehensive solutions than the command and control regulation of the past that take into account not only today's needs, but also those of future generations.

This updated nonpoint source plan for New Jersey provides a detailed description of how the NJDEP, in concert with our partners and an informed public, will implement nonpoint source and stormwater management control strategies to continue this progress in maintaining and improving New Jersey's water quality. The updated nonpoint source plan is being completed in response to guidance from the Federal Environmental Protection Agency (USEPA) for state nonpoint source programs (Clean Water Act, Section 319) and US Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) for coastal nonpoint source programs (Coastal Zone Management Act, section 6217).

Over the past few years, the NJDEP has steadily evolved its philosophy and processes changing how the success of its efforts are measured into an environmental results-based management system. Instead of simply counting the number of permits we issue, the inspections we conduct and the fines that are levied, the NJDEP has gradually increased its focus on the environmental results we achieve. Permits still must be issued and inspections made, but the true measure of success is the health of the environment in New Jersey. This is made evident by maintenance of and improvements in environmental indicators.

NJDEP has institutionalized this approach through its first agency-wide Strategic Plan (NJDEP, 1998). The NJDEP Strategic Plan sets forth the Department's vision and mission, six broad goals, milestones and strategies to be emphasized over the next four years in order to improve the environment and our delivery of public services. In addition, through the National Environmental Performance Partnership System (NEPPS), the NJDEP and USEPA have developed Performance Partnership Agreements (PPAs). The PPAs provide a detailed

outline of the Department's environmental goals and includes milestones (measurable targets), strategies, activities and indicators for each. (NJDEP, 1996, 1997, 1999) The PPA serves as a comprehensive, cross-program planning document, complementing and providing more detail than the Strategic Plan. Through the Strategic Plan and the PPA, the NJDEP has for the first time systematically established goals and milestones, linked our strategies to achieve these goals and developed indicators to measure our progress.

The problem of nonpoint source pollution, and the need to implement nonpoint source programs that result in real, quantifiable environmental improvements can be found throughout the Strategic Plan and the PPA. This updated nonpoint source plan, through a 15-year program strategy, further describes New Jersey's overall approach to implementing nonpoint source controls and meeting environmental goals and milestones established in the Strategic Plan and the PPA over the long term. In addition, 5-year implementation plans detail what, when, where and how major elements of the nonpoint source program will be implemented for the short term. Further, this updated nonpoint source plan aims to establish overarching direction for and coordination of New Jersey's nonpoint source pollution and stormwater programs including Coastal Nonpoint Source Pollution (6217), Stormwater Management and Permitting, and Soil Erosion and Sediment Control.

For the purposes of this program plan, the realm of pollutant sources considered to be nonpoint source and stormwater runoff include:

- Construction: land development, roads, bridges

- Urban Runoff: storm sewers, pets, lawn care, surface runoff, and storm sewer interconnections

- Agriculture: crop production, feedlots, animal holding, and farmland erosion

- Land Disposal: landfills, on-site wastewater systems

- Hydromodification and Habitat Modification: streambank destabilization, flow modification, removal of riparian vegetation, loss of forests and open space

- Marinas and Recreational Boating: siting and design of marinas, boat activities, maintenance, waste discharge

- Ground water loads/withdrawal: septic systems, loss of base flow, lawn care, stormwater recharge, sewer line leakage, agriculture

- Contaminated sediments: land fills, contaminated sites, underground storage tanks, brownfields

- Air Deposition: regional and local sources

- Wildlife: geese, deer

Chapter One: Stating and Evaluating the Problem

This chapter describes the goals and milestones established for New Jersey's waters and current conditions and trends in water resources. This chapter also describes how we are working together to improve our knowledge of water resource systems and nonpoint sources of pollution that impact them.

Nonpoint sources of pollution have long been thought to be major contributors to the degradation of water quality in New Jersey. Some especially challenging issues have inhibited our ability to more clearly define and address the nonpoint source problem: how significant are the nonpoint source contributions relative to point sources, what are the relative contributions of different nonpoint sources, what are the water resource impacts of various nonpoint sources and what management strategies are effective in addressing nonpoint sources. The first step to resolving these issues involves the collection and evaluation of water resource assessment data. While there is a great deal known in this area, there is still a great deal to be learned and a great deal of data to be collected and analyzed.

Water resource information is collected and assessed in New Jersey by a variety of Federal, State and local entities. Water resource data collection is done for a variety of purposes. These include determining statewide compliance with Surface and Ground Water Quality Standards, identifying areas where specific uses must be restricted or curtailed as in the closures of bathing beaches, classifying shellfish growing waters and evaluating drinking water quality. The assessment provided below was derived from the 1996 and 1998 New Jersey Water Quality Inventory Reports, 305b (WQIR available from the NJDEP, Division of Science and Research). These assessments were primarily based on Federal and State data. Efforts are underway to improve data exchange with watershed partners and establish reference conditions for watershed reaches.

New Jersey Water Quality Inventory Reports indicate that in general, "Nonpoint source pollution is a ubiquitous problem throughout much of the State. Runoff from agriculture, roads, and urban/suburban surfaces is the most commonly reported nonpoint pollution source. The severity of the problem both in terms of the quantity of pollutants as well as their degree of impact upon the receiving waters appears to be directly proportional to the regional population density or the intensity of local agricultural activity." (WQIR, 1988) "The most frequently encountered pollutants in New Jersey's freshwater rivers and streams are pathogens, nutrients, suspended solids and dissolved solids. Habitat destruction resulting from certain construction and agricultural activities is also of concern... The sources of these pollutants include both point sources (industrial and municipal) as well as stormwater outfalls, agriculture, construction activities, urban runoff (including wintertime roadway deicing) and air deposition." (WQIR, 1996)

As mentioned in the Introduction, the NJDEP has developed a Strategic Plan and the NEPPS/PPA. A vision, goals, milestones and indicators were developed under the Strategic Plan and NEPPS for New Jersey's water resources. These initiatives set the direction for the Department's programs including the nonpoint source and stormwater management program and, in turn, serve to focus our assessment efforts.

As reflected in the Strategic Plan's Clean and Plentiful Water Goal below, our overall long term goal is to have waters in New Jersey meet designated uses. Under this water resource goal and subsequently under the Healthy Ecosystems and Abundant Open Space goals which follows are listed a series of milestones. These milestones and the status of the assessment efforts and conditions related to these milestones are as follows:

Vision: The Department of Environmental Protection is committed to provide a high quality of life for the residents of New Jersey.

Clean and Plentiful Water Goal

New Jersey's rivers, lakes and coastal waters will be fishable, swimmable and support health ecosystems. Surface and ground water will be clean sources of water. Every person in New Jersey will have safe drinking water. Adequate quantities of surface and ground water will be available for all needed uses.

Long Term Goals

- By 2007, NJ will complete TMDLs as agreed through the TMDL Memorandum of Agreement with EPA, Region II.
- By 2015, NJ will implement nonpoint source TMDLs completed in accordance with TMDL Memorandum of Agreement with EPA, Region II.
- By 2015, NJ's waters will meet surface water quality criteria.
- Within 15 years, NJ will implement CZARA Nonpoint Source Management Measures.

As NJDEP is developing Watershed Management Plans with watershed partners for all 20 watershed management areas in the State, strategies equivalent to Watershed Restoration Action Strategies for all impaired waters of the State will be developed and implemented. The development of the Watershed Management Area Plan for each Watershed Management Area is anticipated to

be a 4 year process to complete the first round in what is expected to be an ongoing process with a living document.

Healthy Ecosystems Goal: The health, diversity and integrity of New Jersey's ecosystems will be restored, protected, enhanced and sustained.

Water and Ecosystem Milestones:

- Water Assessment Milestone
By 2003, New Jersey will complete a baseline assessment of its waters.
- Recreational Designated Use Milestone
By 2005, 100% of New Jersey's coastal recreational beach waters will be safe for swimming.
- Wetlands Milestone
By 2005, there will be a net increase in wetland acreage and quality.
- Nontidal Freshwater Rivers and Streams Aquatic Life Designated Use Milestone
By 2005, 50% of assessed non-tidal river miles will support healthy, sustainable, biological communities.
- Recreational Designated Use Objective
Maintain and improve the current number and quality of suitable lake, ocean and bay bathing beaches in NJ.
- Shellfish Consumption Designated Use Milestone
By 2005, 90% of New Jersey's classified waters will provide shellfish that are safe to harvest.
- Headwaters and Riparian Corridors Objective
Maintain and restore vegetative bank cover and buffers adjacent to headwaters and stream corridors by 2005.
- Forest Resource Objective
Maintain and restore New Jersey's forest resources.
- Soil Erosion Milestones
By 2005, all municipalities will adopt and implement ordinances to reduce erosion through the reduction of peak runoff rates after development, and set goal of 80% reduction of total suspended solids for best management practices.
By 2005, 20% increase in the acreage of agricultural lands eroding below tolerance level.
- Open Space Milestone
By 2008, one million more acres of open space will be protected.

Improving NPS Impact Assessment

To insure that nonpoint source pollution control strategies will improve the quality of our water resources in a cost-effective manner, better information is needed on sources and impacts of nonpoint source pollution. Roger Bannerman, Wisconsin Department of Natural Resources Urban Water Quality Monitoring and Assessment Approaches in Wisconsin, developed a method of accomplishing this by asking the following questions:

Seven Stormwater Management Questions Used to Design Monitoring Activities

1. What are the designated uses of the waterbody?
2. What are the problems in the waterbody?
3. What are the pollutants and/or habitat factors degrading the waterbody?
4. What are the sources of the pollutants?
5. What are the goals for reducing pollutant loads and changing other factors?
6. What management alternatives will achieve the goals?
7. What did the implementation of the practices improve in the waterbody?

To date, statewide water resource monitoring and assessment in New Jersey has effectively characterized ambient biological and chemical water quality. However, a systematic method of assessing the effects of NPS on statewide surface and ground water quality and designated uses such as the one outlined by the seven questions above has not been implemented. Significant progress in this direction is now being made through research projects and improvements in our watershed monitoring and assessment programs. Some available or developing assessment information includes:

- Due to strict limitations of point sources discharges for fecal coliform, the remaining fecal coliform issues can be attributed to combined sewer overflows and nonpoint sources.
- The Department is currently coordinating with Rutgers University Office of Continuing and Professional Education, to develop and promote a series of volunteer monitoring workshops throughout New Jersey aimed at teaching citizens how to better understand their watershed. The first workshop, "River Assessment Teams" (RATS) training, will give volunteer organizations the skills needed to conduct a physical assessment of their watersheds. The second, "Biological Assessment Teams" (BATS), will focus on teaching volunteers to collect and identify macroinvertebrates in their local stream, and use this data to assess the general health of the water body. A third, "Chemical Assessment Teams" will also be developed. This process allows local citizens to become involved as partners to enhance the water quality in the state.
- NJDEP and USGS jointly completed a geographical information system base study of NPS loads in New Jersey's coastal plain from various land uses in

the Toms River watershed. This study shows that NPS contributions to the Toms River are greatly affected by the type and intensity of development and historical land use in the contributing drainage area and are a result of ground water and storm runoff contributions, modified by instream biological and chemical processes.

- USGS, under a contract from NJDEP, has estimated relative contributions of NPS to instream concentrations and loads. High flow concentrations and loads were used to indicate nonpoint sources, low flow concentrations and loads were used to indicate ground water and point source contributions. The study focuses on nutrients, dissolved oxygen and fecal coliform.
- Watershed characterization and assessments, environmental indicator development, TMDL development, and additional assessment efforts in NPS projects will provide additional data regarding the effects of NPS on the state's water resources.
- Results from USGS's National Ambient Water Quality Assessment (NAWQA) New Jersey/Long Island project are becoming available and will inform NPS impact assessment.
- NJDEP and USGS recently began implementing a redesigned Ambient Stream Monitoring Network. The redesigned network includes land use indicator stations that can be used to estimate concentrations and load from the two dominant land uses in each watershed management area. The Ambient Biological Monitoring Network, which collects benthic macroinvertebrate population data at 771 stations in freshwater streams statewide recently, added a systematic habitat assessment. Statewide habitat data will be available within the next 5 years.
- The Water Quality Inventory Report (305b Report) is being enhanced to include a more quantitative source and cause assessment that evaluates point and nonpoint sources that contribute to designated use and criteria impairments. Results will be reported in the national Assessment Database.
- NJDEP is piloting an air deposition-monitoring network and is working with EPA and other partners to begin using air deposition data to estimate loads of pollutants from air to water.
- Land use and land cover geographical information system coverages are being updated. New data can be used to evaluate trends in land use change and estimate impervious surface cover.
- To improve our understanding of ecological conditions in streams, an ecological assessment method will be developed to integrate the chemical, physical and biological health of our surface waters and instream and riparian habitats. This will include an evaluation of existing aquatic resource data for New Jersey and development of ecologically based indices of aquatic habitat quality building upon our current program data (for example, Fisheries, Endangered and Nongame Species, Water Monitoring Management, and Science, Research and Technology).
- Through development of TMDLs, nonpoint source contributions and loads will be assessed in detail.

- The State of New Jersey will utilize the Grants Tracking System to report on the use of 319 projects as agreed in the Performance Partnership Agreement and Grant.

NJDEP will continue to improve our water resource assessment methods and more efficiently identify specific sources and relative contributions of NPS and stormwater runoff impacts. Further coordination and communication with and among entities (i.e. NJDEP, SCD, NRCS, USGS, academic institutions, private interests, environmental groups, local and regional partners) completing NPS assessment projects will be encouraged.

Data and data analysis gaps

Many of the efforts described under the section above are just beginning. Comprehensive data and assessments are not expected to be available for several years. In addition, New Jersey has very complex land and water use patterns. Often, land use varies within very small areas and water is extensively diverted in some areas of the state. These factors confound NPS assessment. Major data and data assessment gaps include:

- Specific pollutants, concentrations and loads from various NPS,
- Transformation of air deposition data to water concentrations and loads,
- Evaluation of BMP implementation and effectiveness for various NPS over time,
- Identification of specific NPS reduction and management goals and milestones, and
- Development, implementation and use of STORET/ENDEX to exchange data.

The results based management approach includes establishing a milestone that reflects a reasonably ambitious target, identifying and developing indicators to track causes/ pressures; current conditions and trends; and societal responses. For example:

NJ Milestone:	By 2005, 90% of New Jersey's classified waters will provide shellfish that are safe to harvest. (Baseline 87%)
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Cause/Pressure Indicator:	Status and trends in urbanization
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Management Strategy:	Implement Shellfish Milestone Action Plan
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Response Indicator:	Percent implementation of the Shellfish Milestone Action Plan
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- Based on the Condition Indicator, 87% of classified waters currently provide harvestable shellfish and the overall trend is increasing.

Thus, 90% harvestable waters by 2005 was considered to be a reasonably ambitious target for the milestone.

- Analysis of recent data showed that stormwater due to urbanization is a significant contributor (pressure) on shellfish beds. Trends in urbanization was selected as an indirect indicator because specific data on outfalls is not available.
- A Shellfish Milestone Action Plan was developed to identify specific management measures that could be reasonably expected to lead to upgrades that would achieve the milestone.
- A response indicator will be developed in the future to track implementation of the Action Plan. Success of the Action Plan will be tracked through improvements in the Condition Indicator.

Indicators used to show progress toward short and long term goals are identified in the NEPPS agreement. In the future, NJ is working toward improving its ability to document successes of program implementation by the following steps:

1. expanded ambient monitoring network
2. biological monitoring network and Dot strategy
3. tie reporting of nps project results in with 305(b) reports
4. watershed characterizations
5. improve ecological assessment project.

Chapter Two: Setting the Direction towards a Solution

The Washington, D.C.-based Public Employees Roundtable and the President's Interagency Council of Administrative Management has selected DEP's "Open & Effective Government" initiative as one of four national finalists in the Public Service Excellence 2000 Awards Program. NJDEP has received national recognition for our regulatory programs and strategic planning initiatives that are improving the quality of life for New Jerseyans. The nonpoint source program is designed to support the overarching Clean & Plentiful Water, Open Space and Healthy Ecosystem goals articulated in the Strategic Plan. In addition, some underlying components are necessary to sustain efforts by the wide variety of partners that are integral to achieving these overarching environmental goals and to manage the carrying capacities of our waters. Primary program components that will be found throughout our strategies are: (1) building partners and partnerships, (2) increasing public education, awareness and involvement, (3) institutionalizing results based management, and (4) implementing watershed management. Each of these components and how they set an underlying framework for our program is described in this chapter.

Building partners and partnerships

NJDEP can provide leadership and assistance in environmental management, but improving the quality of life for all New Jerseyans requires the active participation of the people who live, work and raise families in our State. As the origin of nonpoint sources of pollution are so varied and diffuse, this type of pollution in particular needs to be addressed by a multitude of partners including individuals, community groups, watershed associations, natural resource conservation organizations, farmers, local and regional governments, schools, and businesses. Key partnerships for nonpoint source pollution control that exist on the Statewide and watershed level include the Nonpoint Source Advisory Committee, State Soil Conservation Committee, State Technical Committee and Watershed Committees.

An avenue of building local partnerships being piloted in New Jersey is the development of performance partnership agreements between local/regional agencies and NJDEP. The agreements are to follow the model of NJDEP's NEPPs agreement with USEPA. This type of agreement is currently being initiated with Burlington County, the City of Bayonne, and a collection of Southern New Jersey Soil Conservation Districts. These pilot performance partnership agreements will assist NJDEP in bringing results-based management to the county and community level by focusing attention on nonpoint source pollution.

A critical factor in our ability to collectively manage nonpoint sources of pollution is focusing and improving the institutional capacity and sense of stewardship of our partners. To accomplish nonpoint source pollution control, local and regional entities will need to take responsibility and be empowered to set local or watershed objectives, control local sources of pollution and educate others of the cumulative impacts of what appear to be minor actions. Currently, municipal and

county governments, regional soil conservation districts and regional commissions have varying and somewhat limited financial, technical and administrative resources. Many local runoff utilities operate throughout the country and provide administrative and financial support for stormwater control programs. New Jersey should explore stormwater utilities and other innovative approaches for gaining necessary program resources. Controlling point sources of pollution took many years, many new governmental and private partners and billions of federal and private dollars. Successfully managing nonpoint sources of pollution and stormwater runoff can be expected to require a similar if not greater commitment.

A brief description of key nonpoint source coordination efforts for partners is provided below:

NJ Nonpoint Source Advisory Committee

The NJ Nonpoint Source Advisory Committee has met on a consistent basis for over ten years beginning as a State and Federal Coordinating Committee. The original committee evolved to an advisory committee which assisted in program development and implementation. In this capacity the committee made recommendations on how and what NJDEP Nonpoint Source efforts should be focused and reviewed and recommended nonpoint source projects for funding under the Section 319 grant program.

The Nonpoint Source Advisory Committee is currently evolving again as NJDEP's Nonpoint Source and Watershed Management Programs are moving into higher gear. The voluntary committee still consists of participants from NJDEP, EPA, Association of NJ Environmental Commissions, United States Geological Survey, Rutgers Cooperative Extension, NJ Builders Association, NJ Department of Agriculture, NJ Farm Bureau, Delaware and Raritan Canal Commission, Watershed Association and other partners in the watershed process. The committee will continue to serve as an information exchange network as it will meet quarterly to discuss innovative technology, and major statewide NPS programs and projects throughout the state. A new element to committee responsibilities will be to participate in the five regional meetings annually, located in each of the Watershed Regions. At these meetings, recipients of 319 grants within the region will present their projects, the project status, and the information obtained as a result of the project.

NJ State Soil Conservation Committee

The natural resources conservation program is administered by the State Soil Conservation Committee (SSCC). Established by statute in 1937, SSCC membership includes the Secretary of Agriculture (chair), the Commissioner of NJDEP, the Director of Rutgers Cooperative Extension, the Dean of Cook College (Rutgers University), an appointee of the Governor and six local soil conservation district supervisors.

The SSCC coordinates and supports the work of the 16 local soil conservation districts (SCDs) and their programs, establishes statewide policy, provides technical assistance and training, sets technical and administrative standards, coordinates nonpoint pollution control and agricultural cost-sharing programs, distributes funds, conducts appeals and assures accountability of local SCDs.

In addition, the SSCC coordinates with federal and state agencies to provide natural resource conservation and management services through the SCDs. The SCDs also review and enforce SSCC-approved erosion control and soil and water management practices on construction, mining and other land disturbance activities associated with development in order to protect water quality and avoid damage from stormwater runoff.

NJ Municipal Stormwater Permitting Advisory Group

The Municipal Stormwater Permitting Advisory Group (MSPA) consists of several entities outside the Department that provide assistance with the development of the Municipal Stormwater Permitting Program. Based on extensive Bureau experience with advisory groups of this kind, MSPAG has been designed to be a relatively small group of persons who would actively participate in program development. It is expected that the MSPAG will be the single most important means of outreach and public involvement in the Department's development of the Program.

The entities represented in MSPAG are the following: New Jersey Federation of Planning Officials, Associates of New Jersey Environmental Commissions, New Jersey Department of Transportation, New Jersey Public Works Association, New Jersey State League of Municipalities, New Jersey Builders Association, New Jersey County Planners Association, City of Elizabeth, Township of Woodbridge.

Public Advisory Committee for the Watershed Management Rules

The Public Advisory Committee, also known as the Watershed Management Rule stakeholders, consist of members of the environmental community, the regulated community, and government agencies. Their role was to provide input on the direction and specific requirements of the draft Watershed Management Rule proposal. Over the past year, the committee met approximately every three weeks to discuss the draft of the rules.

NJ State Technical Committee

The State Technical Committee was created by USDA-NRCS to advise the State Conservationist on program policy issues associated with the 1997 Farm Bill. It is a voluntary group of representatives of agricultural and environmental organizations. They have assisted in the EQIP program, with providing recommendations for establishing priorities, criteria and other matters. National Organic Farming Association, Farm Service Agency, SSCC, NRCS, US Fish &

Wildlife, Rutgers Cooperative Extension, NJ Dept of Agriculture, NJDEP, EPA, NJ Farm Bureau

Watershed Management Partners

As New Jersey is developing Watershed Management Area Plans for each of the 20 watershed management areas in the State, significant partner involvement is occurring on a local and regional basis. In many areas, the NJDEP is contracting with our partners - government agencies, non-profit organizations or state colleges/universities - to function as an arm of DEP, performing the administrative and coordinating functions for watershed planning. A major task, for NJDEP or a contracted entity, in watershed plan development is establishing a Public Advisory Group of Federal, interstate, state, regional, local entities that have an interest or stake in the quality of the watershed and/or tools or measures that may be needed to implement a plan. Forming a partnership for watershed management is a fundamental element of the process, not only as a first step, but also as a continuing and evolving component of the plan. The partnership's function is broad and includes project coordination, resource sharing, identification of local concerns, developing goals, establishing priorities, developing strategies, participating in management plan development, ongoing monitoring, and implementation of the plan. Partnership input shall be sought during all phases of Watershed Management Plan development and implementation.

Increase Public Education and Awareness

Since everyone who lives, works or visits a watershed contributes to its nonpoint source problems, informing the public about nonpoint source control programs, their purposes, and how every citizen must be a part of the solution is critical. NJDEP's nonpoint source pollution education and awareness efforts will be tied closely with the development and implementation of watershed management plans. We believe that citizens, local and regional governments and businesses are more interested in receiving and utilizing educational materials once a connection close to home has been made. NJDEP recognizes and will support the many partner organizations with successful programs already conducting nonpoint source education efforts.

Results Based Management

As discussed in the introduction to this plan, NJDEP through its Strategic Plan and participation in NEPPS has begun implementing a results-based management system. For the first time, environmental goals and milestones have been systematically established, strategies are now linked to the achievement of these goals and indicators are being developed to measure our progress. It will take several more years to fully integrate this system throughout NJDEP. This updated nonpoint source control plan and the 15-year nonpoint source control strategy described in Chapter 3 begin the integration of our Nonpoint Source Control Program.

Implement watershed management

The NJDEP is implementing a watershed management approach to achieve protection of New Jersey's surface and ground water resources. This approach has been mentioned in the other underlying program principles described above and will be more fully described in the Chapters to follow. As of Fall of 2000, New Jersey is developing watershed management plans for all watershed management areas of the state on an iterative four year planning cycle. A constitutional amendment was passed that allocates funds from the Corporate Business Tax specifically for watershed management.

Chapter 3: Steps toward a Solution

Many water pollution control programs currently exist in New Jersey that in some way address NPS and stormwater management. A summary of these programs is provided in the table attached entitled "Current NPS and Stormwater Management Programs." Though these programs have been in place for a number of years and are accomplishing environmental results in many instances, our efforts have been limited to date considering the potential magnitude of the NPS and stormwater runoff problem. To achieve and maintain beneficial uses of water as expeditiously as practical, our efforts to control nonpoint sources of pollution will need to be improved.

This chapter establishes a 15-year nonpoint source control strategy and describes major initiatives for improving the methods and tools we will use to address NPS and stormwater runoff. We know our approaches will need to be varied and a mix of regulatory, nonregulatory, financial and technical assistance approaches will be necessary. The 15-year strategy provides a common results based management theme around which our various approaches can be coordinated. The 5-year implementation action plans in chapter 4 provide detail on how the initial phase of the 15-year strategy will be accomplished for priority sources and issues.

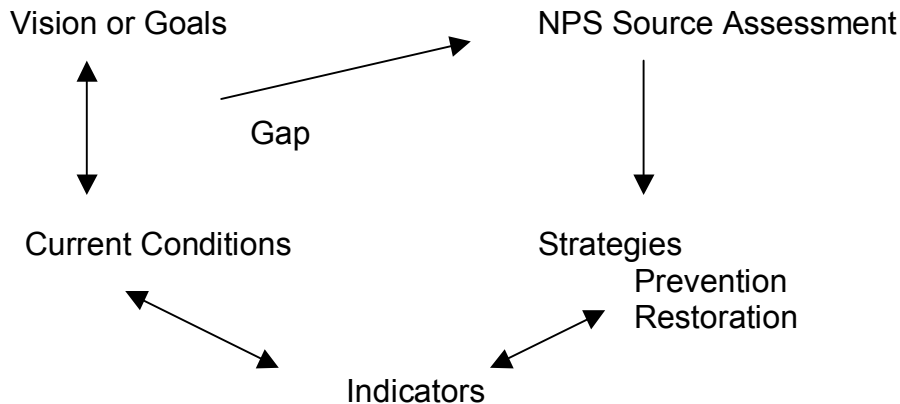
15-Year Nonpoint Source Control Strategy

The 15-year Strategy identifies the method that will be employed to prevent and restore nonpoint source impacts in our waters through results based management. Nonpoint sources management will include both statewide and watershed specific approaches, some will be accomplished in the short term and others will take longer. A balance is struck between the need to show improvement in impaired waters by addressing existing sources of nonpoint source pollution, and the need to prioritize preventive approaches, which normally are more efficient overall. In reality, many of New Jersey's waters need both restoration and prevention efforts.

The following seven steps as illustrated in the figure below define the environmental results based management process for preventive and reactive nonpoint source control actions:

1. develop local vision or goal
2. assess current or projected conditions
3. assess gaps between the vision and current condition
4. determine sources of impacts causing gap
5. develop preventive and/or reactive strategies
6. implement strategies
7. assess effectiveness of strategies through measurement of indicators
8. modify program as needed

Environmental Results Based Management for NPS Control



Under the 15-year strategy, restoration approaches for waters that are already impaired are identified by targeting strategies to eliminate the gap between the current environmental condition and a specific goal or vision. For example, a goal is to make fishable a shellfish bed closed to harvesting because of high fecal coliform counts. The actions necessary to open the shellfish bed to harvesting depend on what the sources of fecal coliform are identified to be in the nonpoint source assessment step. In addition, the sources may be local such as homeowner pets defecating on a shoreline and/or from a stormwater discharge pipe draining an entire basin. Nonpoint source control strategies may be as simple as adopting a pooper scooper ordinance in a municipality or may be as complicated as mapping an entire storm sewer systems to determine where upstream retrofit is necessary.

Some restoration strategies will be applicable on a statewide basis such as practices to control geese populations, reestablish riparian habitat, methods to identify illicit connections to storm sewer systems, and maintenance practices for street cleaning and structural stormwater facilities. Other restoration strategies will be specific to individual waters and watersheds.

In general, restoration strategies will be identified by the process above and fit into one of the two categories below:

- I. Short-term restoration strategies should be implemented throughout the state where immediate improvements in designated use impairments are feasible through implementation of minor projects.
- II. Longer term watershed restoration efforts will be implemented in coordination with the Department's watershed management process

including the executed 8 year Total Maximum Daily Load implementation Memorandum of Agreement with USEPA Region II, watershed restoration action strategies, and regional stormwater management plans.

Preventing new impacts to waters in New Jersey from nonpoint sources of pollution may be more efficient economically and technically, but will be just as challenging as restoration. Where development is going to occur and natural land cover and hydrology disturbed, nonpoint sources will be present. To build reasonable strategies to prevent nonpoint source impacts to the greatest extent practical, priorities have to be identified, source controls implemented and environmentally friendly land use planning completed and implemented. Examples of where prevention strategies should be implemented first are drainage areas of trout production waters and other environmentally sensitive and valuable areas such as headwaters and riparian areas. Prevention efforts many times rely on the aftermath of environmental disaster such as dangerous and costly floods or serious droughts or take strong education programs built on scientific documentation of potential impacts.

Generally, prevention efforts over the next 15 years will focus on strategies in the following two categories:

- I. Short-term preventive approaches to controlling priority NPS will be implemented throughout the state through minimum runoff control requirements for new development, land preservation and the stewardship of existing forests and open space, education and outreach, innovative septic system management approaches, municipal stormwater permits and stream corridor protection.
- II. Longer-term preventive approaches will be developed for specific watersheds or subwatersheds through Watershed Management Plans and Regional Stormwater Management Plans. Watershed specific preventive approaches can link NPS controls to the identified carrying capacity of waters or load allocations in TMDLs and the vision of local partners.

In addition to improving the process for identifying nonpoint source and stormwater strategies for specific waters and their unique identities, some improvements to New Jersey's NPS and stormwater program elements are needed to improve our efficiency. Key program objectives include:

- Nonpoint source and stormwater runoff assessment approaches will be improved.
- Various programs to control or regulate stormwater runoff should be coordinated and build upon one another so that state, regional, and local programs and permit requirements implement watershed based goals and performance standards. Nonpoint source and stormwater runoff control strategies implemented through municipal permits should implement Regional Stormwater Management Plans and TMDLs.

- TMDLS will be developed for nonpoint source impaired waters in accordance with our memorandum of agreement with EPA and for nonpoint source threatened waters as resources allow.
- NJDEP and partners should jointly prepare for implementation of Phase II municipal stormwater permits by making available tools and incentives.
- For ease of compliance and implementation, guidance and design criteria for NPS and stormwater best management practices should be consistent across runoff control programs in New Jersey.
- Strong regulatory and financial incentives should be created for environmentally friendly site planning and design.
- Projects should be prioritized for nonpoint source control grants based on preventing nonpoint source pollution in unimpaired waters and restoring waters impaired primarily by nonpoint sources. Nonpoint source control grants should implement nonpoint source control plans developed as a part of watershed management plans and/or regional stormwater management plans.
- Techniques that prevent nonpoint source impacts such as watershed or regional land use planning, education and outreach, stream corridor protection, and land/forest preservation and stewardship should be encouraged, funded and implemented.
- The institutional capacity of local and regional entities needs to be fostered and improved for adequate NPS and stormwater runoff control.
- There is a need to identify costs for adequate NPS and stormwater runoff control.
- New Jersey should accomplish Coastal NPS Program Plan approval without conditions and implement 6217 management measures by integrating the Coastal NPS Program into the Statewide NPS and Stormwater Management Program.
- While the implementation of nonpoint source pollution abatement strategies/projects as listed throughout this document may be funded through the state's Clean Water State Revolving Fund (CWSRF), not all of these activities are currently eligible. The Department's annual Priority System, Intended Use Plan and Project Priority List document will identify those stormwater and nonpoint source areas that NJ's CWSRF considers eligible in a given financing year.

Major initiatives NJDEP and our partners are currently developing to improve the methods and tools we will use to address NPS and stormwater runoff are described for the remainder of this chapter.

Watershed Management

NJDEP is committed to implementing a watershed management approach in all 20 Watershed Management Areas on a four year iterative planning cycle as a means to further restore and maintain the physical, chemical and biological integrity of our waters. Under this approach, NJDEP is moving toward a broader, rather than site-specific, approach to protecting our water resources most

effectively. It is recognized in the watershed management process that involvement and coordination by partners particularly local and regional entities is not just important but necessary for success in stormwater management and NPS control.

On January 14, 1997, NJDEP released the Draft Statewide Watershed Management Framework Document for the State of New Jersey. This document explores the different aspects of a statewide watershed management process, and proposes a delineation of watershed and watershed management area boundaries. Under this framework, the state's 149 watersheds are grouped into 20 watershed management areas within five water regions. The document also provides a structure for coordinating and integrating existing NJDEP programs through a watershed framework. The watershed planning schedule outlined in this document is outdated and will be updated. New Jersey will have initiated watershed planning in all 20 watershed management areas of the state by the fall of 2000. Though TMDLs are one of many components of the NJ watershed planning approach, the attached Memorandum of Agreement between NJDEP and EPA Region II provides a schedule of when TMDLs will be developed for watershed management areas.

NPS control, stormwater management and watershed restoration action strategies as envisioned in the Clean Water Action Plan and subsequent EPA guidance are integral elements of the watershed management process. Regional stormwater management and/or NPS plans may be developed concurrent or separate from watershed management plans that addresses all water resources issues within a watershed. However, NJDEP envisions that once a comprehensive watershed management plan is developed or developing, NPS control and stormwater management will be a part of the broader process. Updated Municipal Stormwater Management rules will be proposed and include a process for the development of regional stormwater management plans by local and regional entities. NJDEP will provide incentives in regulatory programs for the implementation of regional stormwater management plans. Specific regulatory programs that include or are planned to include these incentives are NJDEP Land Use Regulatory Permits, NJ Department of Community Affairs Residential Site Improvement Standards, and the upcoming municipal stormwater permits under Phase II of Clean Water Act Section 402(p). (see discussion under Stormwater Permitting)

A Unified Watershed Assessment was completed in New Jersey in 1998 to prioritize watersheds for restoration activities under the Federal Clean Water Initiative. New Jersey's Unified Watershed Assessment identified the Upper Passaic, Millstone, Rancocas, Pompton Tributaries, Middle Delaware, Barneget Bay Watersheds and Lower Delaware watersheds as the initial priority watersheds. Watershed Restoration Action Strategies have been completed at least in preliminary form for all of these areas.

A statewide approach to WRAS development is currently being pursued by NJDEP. This approach recognizes that a large percent of our waters need restoration actions and all 20 watershed management areas (WMAs) have one or more water segments listed on our impaired waterbodies list (303(d)). Although significant improvements have been made, remaining issues include biological and chemical impairment, lake eutrophication or fish consumption advisories. Because there are some remaining impairments in all watershed management areas, New Jersey Department of Environmental Protection will be pursuing the following updated strategy:

1. An updated Unified Watershed Assessment will be prepared and submitted which identifies all watershed management areas as Category I priority watersheds.
2. NJDEP will be conducting watershed management planning in all 20 WMAs by the end of September 2000. Plans equivalent to watershed restoration action strategies will be developed in all 20 WMAs through the watershed planning process.
3. NJDEP is making 319(h) funds available to our watershed management partners using the attached guidelines for projects targeted at remediating or preventing impairment.
4. NJDEP will therefore make available base and incremental 319(h) funds for preventive and restoration actions on a statewide basis through our watershed management planning efforts. Incremental funds would be focused at remediating impairments and NJDEP would not submit to EPA, watershed restoration action strategies separate from TMDLS, Estuary Management Plans, Watershed Management Plans. NJDEP will report on project progress and results through the Grants Reporting Tracking Systems and the 305(b) report as agreed in the Performance Partnership Agreement.

Open Space Preservation

New Jersey has received national attention for its land preservation agenda – a politically viable effort to slow suburban sprawl, maintain farming in the garden state, protect historic resources, and support public recreation facilities. The preservation of open space protects land from future development, but far more importantly, preservation efforts provide the foundation for maintaining healthy ecosystems and sustainable communities in New Jersey. In the 1998 election, New Jersey voters overwhelmingly passed a referendum to spend \$3 billion to preserve one million acres of the State's open remaining open space. This action has resulted in the June 1999 passage of the Garden State Trust Act, establishing the stable source of funding for land preservation. To supplement

this state level effort, municipalities and counties have adopted open space taxes; many have developed open space plans. New Jersey's land preservation efforts are an incredibly effective nonpoint source pollutant control strategy.

Watershed Restoration Action Strategy Process

Initial Planning: Stakeholder Involvement

- Preliminary Watershed Characterization – *Assemble available information on the current condition of water quality and natural resources*
- Form a Watershed Partnership- *Coordinate public outreach methods and structure that will be used to engage and maintain public and government involvement including local, State, Federal, and Tribal governments*
- Establish advisory groups*
- Identify potential funding sources*
- Establish decision-making structure*
- Engage Partners in Watershed Visioning Exercise*

Watershed Characterization and Assessment

- Watershed Characterization and Assessment – *Focusing on priority issues and water quality and natural resource goals and outcomes conduct monitoring and evaluation activities*
 - *Identify current condition of stream and subwatershed– sensitive (0-10% impervious cover), degrading (11-25% impervious cover), and non-supporting (26%+ impervious cover)*
 - *Inventory of natural resource condition of watershed land – soils, animals, plants, human factors*
 - *Identify reference condition stream for restoration goal. Watershed – specific target watercourse with non-impaired water quality. Morphologically comparable to restoration stream*

Water Quality Data Collection and Analysis: *Identification of problems and opportunities*

Baseline and Historical Data

- *Comparison with data from reference condition and water quality criteria*

Problem or Opportunity Statement

Watershed Problem Identification and Prioritization – *identify the sources of pollution and the relative contribution of sources*

- *Comparison of watershed conditions with reference watershed conditions*
- *Identify scale of restoration effort: landscape, corridor, reach*
- *Identify water quality and natural resource problems that can be addressed in the short term*

Goal Setting

- Establish Goals - *identify specific long-term water quality, natural resource and sustainability goals – prevention, maintenance and restoration*
 - *identify short term water quality and natural resource objectives and problems*
 - *realistic goals should be established for degraded streams on water quality, in-stream habitat, substrate makeup, streambank condition, and riparian corridor width*

Restoration Strategy Development

Simulations/forecasting models

Develop TMDLs where required

Alternatives Analysis

- *Base stream protection/restoration strategies on stream classification: sensitive, degrading, non-supporting (see attached)*
- *BMP evaluation: site planning, land conservation, riparian corridor restoration, stormwater structural, non-stormwater discharges, watershed stewardship and maintenance*

Cost Benefit Analysis

'Action Now' Agenda – *identify short-term actions where nonpoint source control activities are likely to have the greatest immediate demonstrable impact on water quality*

Watershed Restoration Plan Development

Plan Formulation – *Develop a blueprint of the actions - in the form of pollution control and natural resource restoration measures - to be taken to meet desired water quality and natural resource goals and outcomes*

Plan Proposal and Adoption

Watershed Restoration Plan Implementation

Schedule for implementation of restoration measures and identification of lead agencies to oversee funding, implementation, maintenance, monitoring and evaluation

Public Information Campaign

Maintenance Commitments

Permit Issuance: *Interagency coordination*

Nonregulatory Measures: Incentives, financial and otherwise

Financing: *Identify funding to support the implementation and maintenance of restoration measures*

Evaluation and Refinement

Monitoring Plan

Evaluation

- *develop indicators for stream health based on reference stream including channel capacity and stability, aquatic habitat, riparian habitat, water quality*

Adaptive Management

Enforcement Mechanisms

Total Maximum Daily Loads

A principal water quality management strategy of the Department is the development and implementation of Total Maximum Daily Loads or TMDLs. Waterbodies that do not meet Surface Water Quality Standards are identified through monitoring and listed on an Impaired Waterbodies List, prepared pursuant to Section 303(d) of the Federal Clean Water Act. Point and nonpoint source loads, margin of safety and reserve capacity are considered in developing the TMDLs. TMDLs will be developed using the simplest approach that adequately addresses the problem. In some situations, new stream and effluent data may be used to run water quality models to simulate dry weather and storm conditions. Point and nonpoint discharges to the waterway must reduce their pollutant loading to within acceptable levels based on the TMDL analysis. Implementation of TMDLs is expected to rely upon both regulatory means and voluntary actions including cooperative efforts by federal, state and local agencies and partners that are adopted in Watershed Management Plans. Nonpoint source control strategies will be developed for the nonpoint source component of the pollutant loading. These strategies will be implemented through permits and other regulatory and non-regulatory measures as agreed to by partners during the development of watershed management plans.

NJDEP and EPA signed a Memorandum of Agreement (MOA) for TMDL development that includes a schedule for completing all needed TMDLs by 2007 (TMDL Adoption Schedule is attached). TMDLs are currently being developed in the Whippany River Watershed, Delaware River Estuary and New York-New Jersey Harbor.

As the following chart indicates, fecal coliform and phosphorous comprise a substantial portion of listed parameters. Broadly speaking, 303(d) Listed parameters (and SWQ Criteria in general) can be lumped into three types that are related to chemical inputs:

- Bacterial Contamination
- Eutrophication (nutrient/phytoplankton kinetics)
- Toxins (e.g. bioconcentration/bioaccumulation)

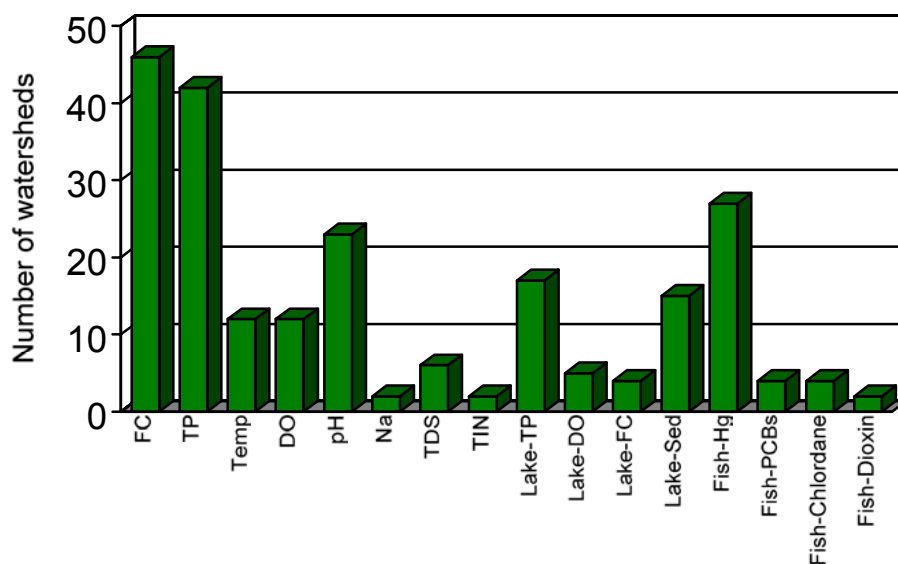
NJDEP modeling efforts will be on watersheds where impairments are real and known to be caused by chemical inputs. NJDEP has formed a water assessment team to work with the water monitoring program on projects that will help verify impairment and assess causes. Improvements in water quality data, water quality criteria, and water quality will allow us to focus our resources more strategically. Proactive TMDLs for potentially nonpoint source impaired waters will be generated as resources allow.

- Water Assessment Team
 - Improve 303(d) List with more recent data to verify impairment and assess causes
 - Integrate biological, physical and chemical data to verify impairment and identify causes
- Monitoring Division
 - Collect biological, physical and chemical data to verify impairment and identify causes

The goal is to increase the number of water bodies that meet water quality standards in the most effective and efficient means possible.

Current 303(d) Lists Statistics

Frequency of Exceedance



Evaluating the current 303(d) List by watershed (not segment), the following picture emerges:

- About 54 of 149 watersheds listed (not including Hudson River Harbor, Delaware River, and Tidal Estuarine Waters of Cape May Co.)
 - 90% are listed for either fecal coliform or total phosphorus or both
 - 22 lakes are listed for sedimentation or dissolved oxygen (sources tentatively identified)
 - Many watersheds listed for temperature and pH.

NJDEP is focusing initial efforts on strategies to address bacterial and nutrient sources. Bacterial concentrations vary many orders of magnitude over time and space, and often originate from diffuse and poorly define sources. Beside nonpoint sources, bacterial contamination in New Jersey also originates from combine sanitary and storm sewers and concentrated animal feed lots. NJDEP recognizes that calculating bacterial concentrations is not easy using traditional water quality models. Simpler analysis may be used with existing land use data. To the extent possible, sources of bacteria will then be quantified; reduction efforts targeted at the largest sources identified and best management practices with the greatest bacterial removal efficiencies implemented.

Best Management Practices

To describe NPS strategies available for different sources NJDEP has developed the attached BMP Planning Matrix. This matrix is designed as a quick reference outlining the relationship between land uses, pollutants generated, and appropriate BMPs. It is organized by land uses: Agriculture, Woodland, Existing and New development, and coastal (marine). Each land use section contains a list of the more common BMPs and the pollutants treated. This matrix should be used in conjunction with other more detailed guidance provided in the NJDA and NJDEP Stormwater and NPS Best Management Practices Manual; NJDEP Stormwater Facilities Maintenance Manual; Soil Erosion and Sediment Control Standards; Stream Encroachment Technical Manual; Planning for Clean Water, A Municipal Guide.

New Jersey's Nonpoint Source and Stormwater Management BMP manual is being updated with the County Engineer's Association, NJDOT, NJDA, NJDEP and NJDCA. It is intended that the manual that is produced from this effort will be used by all regulatory agencies that review development projects for stormwater management. The manual can also provide a basis for a menu of BMPs to be implemented in municipal stormwater permits.

Action Oriented Projects

An action oriented approach will be used to address nonpoint sources of pollution and stormwater runoff where indications are that water resource impacts are mostly caused by these sources and swift action can make a difference. Action oriented NPS projects will be identified through the NPS source identification process describe in Chapter 2. To facilitate funding of best management practices for action oriented projects, a new process will be established within NJDEP, Division of Watershed Management to identify priority projects with potential funding sources. The steps and chart below illustrate this process:

Steps to Implementing Action Oriented NPS Projects

1. *Identify Watershed*
2. *Determine Use Impairment*
3. *Complete NPS source assessment*
4. *Identify Control Strategies*
5. *Match funding sources*
 - *319(h) - \$3.3 million/year*
 - *Estuary Program Funds*
 - *Corporate Business Tax - \$5 million/year*
 - *Clean Water State Revolving Fund – loans and proposed 20% NPS grants*
 - *Transportation – proposal for portion of federal transportation funds to states for restoration and pollution abatement*
 - *Agriculture – CREP, EQUIP, State General Fund (\$5.3 million)*
 - *Open Space Preservation – Green Acres, NJDA, Local and Regional Open Space Taxes*
6. *Evaluate effectiveness of strategy implementation*
7. *Revise control strategy*

Use Impaired	Root Causes	Control Strategy	319(h)	CBT	CWSRF	Ag	Tea21	NEPs
Shellfish bed closed	Storm sewer Pet waste	Retrofit Ordinance						

Municipal Stormwater Management and Municipal Stormwater Permits

EPA proposed Phased II Stormwater Rules under Section 402(p) of the Clean Water Act, which will ultimately require a large majority of municipalities in New Jersey to obtain New Jersey Pollutant Discharge Elimination System Permits for stormwater. Under these permits municipalities will be required to develop a program to reduce the discharge of pollutants and protect water quality. The proposed rule includes six minimum control measures for permits including public education and outreach, public involvement/participation, illicit discharge detection and elimination, construction site stormwater runoff control, post construction stormwater management in new development and redevelopment, pollution prevention/good housekeeping for municipal operations.

As recommended by EPA, NJDEP's approach to implementing the Phase II stormwater program will be to make it an integral part of comprehensive watershed management. This will include tying permit conditions into impaired water assessment, Total Maximum Daily Load implementation, nonpoint source management and source water protection. NJDEP envisions the Phase II stormwater permit program will include minimum control measures, but also implement area specific controls based on water resource issues within a region. NJDEP expects that cooperative approaches will be used to determine municipal permit requirements. NJDEP will be proposing and adopting amendments to the Municipal Stormwater Management Rules (NJAC 7:8) and the New Jersey Pollution Discharge Elimination System rules to implement the Municipal Stormwater Permitting program.

National Estuary Programs

In 1987, the National Estuary Program (NEP) was established by Congress to recognize and protect "estuaries of national significance." Similar to a watershed management approach, the NEP challenges its participants to develop holistic approaches to protect and preserve estuarine resources through public and private partnerships. NJDEP and other neighboring state environmental agencies serve as hosts to three of the nation's twenty-eight NEPs, which include the Delaware Estuary, New York-New Jersey Harbor Estuary and the Barnegat Bay Estuary NEPs.

Nonpoint source pollution is recognized and addressed as an issue of primary concern in each of these NEPs. Through formally adopted Comprehensive Conservation Management Plans (CCMP), both the Delaware Estuary Program and New York-New Jersey Harbor Estuary Program have demonstrated regional commitments to reducing and controlling nonpoint source pollution impacts. Each CCMP incorporates goals and strategies for nonpoint source pollution control by identifying specific objectives, implementable actions and suggested leads for initiating the actions. The Barnegat Bay Estuary Program, currently developing a formal CCMP, anticipates a similar strategic approach to nonpoint source pollution control in a final CCMP.

Coastal Nonpoint Source Program

New Jersey has committed to implement Coastal Nonpoint Source Pollution Control Measures developed under Section 6217 of the Coastal Zone Management Act Reauthorization Amendments of 1990 throughout the state. Implementation of these measures will be coordinated and integrated into the statewide NPS and Stormwater Management Program. The 15-year strategy earlier in this chapter describes the State's overall approach to ensuring implementation of management measures and improving coastal water quality. The 5-year implementation plans in chapter four describe when, where, and how program implementation will occur.

- . New Jersey offers guidance to developers and partners with respect to measures that are most effective to address specific types of nonpoint source pollution. This guidance assists in implementation of 6217 Management Measures. This guidance appears in several forms:
 - Manuals and other literature, such as the Nonpoint Source Best Management Practices Manual, Stormwater Management Maintenance Manual, Draft Golf Course Best Management Practices Manual, Fact Sheets for Municipal Officials, and brochures.
 - Training. Training is offered to partners throughout the state who wish to become involved in the assessment of their watersheds, such as the RATS, BATS, and CATS training discussed under Key Element #5.
 - Accessibility. Through meetings with our partners, outreach efforts, and coordination with regulatory programs within the Department, the State provides guidance and information to the public. Through the regionalization of our program, the staff of the watershed program is accessible to watershed-wide and statewide-wide partners.

Our current NPS program utilizes available technology to maintain or achieve beneficial uses of water through regulatory and non-regulatory measures. In addition, the State offers funding to assist in the implementation of NPS best management practices designed to abate nonpoint source pollution.

NJ's Soil Erosion and Sediment Control Program

The natural resource conservation program is implemented by the local soil conservation districts. A broad range of conservation services and assistance related to nonpoint source pollution is available through 16 Soil Conservation Districts. These include agricultural conservation planning assistance, agricultural conservation cost-sharing programs, application of organic

materials on agricultural land, agricultural water supply and management, soil erosion and sediment control; storm water discharge authorization and soil surveys.

The Soil Erosion and Sediment Control Act of 1975 as amended requires that virtually all non-agricultural land disturbance activities disturbing more than 5,000 square feet of surface area be performed in accordance with a plan for soil erosion and sediment control which meets SSCC standards as certified by the SCD. In addition, stormwater discharge permits are issued through the SCDs for most construction and mining activities involving five or more acres of land under the New Jersey Pollution Discharge Elimination System. The implementation of the soil erosion and sediment control program results in the prevention of sediment input into a stream or water body.

Flood Hazard Area Control Act Rules

The Flood Hazard Area Control Act Rules regulate discharges of stormwater within a floodplain area. These regulations include requirements for treatment of stormwater for total suspended solids prior to discharge. In addition, it addresses the impact of development on flooding. By addressing the total suspended solids leaving an impervious area or a stormwater facility, these regulations are intended to limit the impact of development on the stream.

Freshwater Wetlands Protection Act Rules

The Freshwater Wetlands Protection Act Rules enhance the nonpoint source/stormwater program in two ways. First, the rules require treatment for water quality prior to discharge into a wetlands. Second, the preservation of freshwater wetlands provided through these rules maintains the natural treatment of many stormwater runoff pollutants provided by wetlands.

Nonpoint Source Project Funding Sources

The State offers funding to assist in the implementation of NPS best management practices designed to abate nonpoint source pollution. The following funding sources are available to implement nonpoint source projects.:

TEA-21

The Transportation Equity Act for the 21st Century (TEA-21) authorizes highway safety, transit, and other surface transportation programs for the next six years. TEA-21 allows the FWHA to participate up to 20% of project costs for 4R projects (Rehabilitation related projects) for the restoration of prior impacts of an original transportation project.

As part of the TEA-21, the Transportation Enhancement funds are grants for projects with a direct transportation relationship that enhance quality-of-life while reaching the greatest number of people. Projects must fall into one or more of the twelve eligible Transportation Enhancement categories, and have a direct relationship to a specific component or mode of the surface transportation system. The eligible category specific to nonpoint source pollution is Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.

Funds may be used for innovative facilities and programs reducing pollution from storm water runoff from transportation facilities that are in addition to current requirements and procedures for such mitigation. Funds may also be used to improve safety for wildlife by connecting large habitat areas where transportation facilities have bisected animal habitat, causing incidents of wildlife losses, especially losses of protected, threatened and/or endangered species. Any municipal or county government, non-profit organization or State agency is eligible; however, all applications from local agencies and non-profit civic groups should receive municipal governing body endorsement in the form of a resolution. Regional projects (affecting more than one municipality) should receive county(s) endorsement in addition to the endorsement of affected municipalities.

319 Funds

EPA has allocated \$200 million dollars for NPS grants for Federal Fiscal Year 2000 under Section 319 of the Federal Clean Water Act. The New Jersey allocation for Federal Fiscal Year 2000 is approximately \$3.3 million dollars, divided into two parts: \$1.65 million for base funds and \$1.65 million for incremental funds. The incremental funds are specifically targeted for projects within four priority Watershed Management Areas (3, 11, 13, and 18) with approximately \$412,000 for each area. The available base funds are approximately \$231,000 for each of the five Watershed Management Regions. The State is required to provide a 40% match to the Section 319 funds. A minimum of 5% of the total Section 319 funds (approximately \$165,000) is targeted to improving water quality in lakes.

Eligible projects must assess and/or implement activities that impact water quality, whether through prevention or reduction. Eligible applicants include local government, water quality management planning agencies, State and regional entities, State and Federal government, universities and colleges.

State Revolving Fund (Clean Water Financing)

The State Revolving Fund is a loan program administered by the NJDEP and the NJ Environmental Infrastructure Trust (NJEIT), that provides financing for the implementation of wide variety of wastewater, stormwater management and nonpoint source pollution projects. There is in excess of \$500 million dollars available for wastewater, stormwater, and nonpoint source, and the program allocates a minimum of \$10 million dollars annually.

The Financing program provides two loans to each project: The first loan, for 50% of the allowable project costs, is from NJDEP at 0% interest rate. The second loan, for the remaining allowable project costs, is from the NJEIT at the market rate. The combination of the two loans results in the entire loan at half the market rate. The term of the loan is the lesser of 20 years or the useful life of the project financed.

Eligible stormwater/nonpoint source activities include, but are not limited to, the construction/rehabilitation of stormwater systems, purchase of maintenance equipment, stream or lake restoration, land acquisition and conservation projects, remedial actions, and others. Eligible applicants include the municipalities, counties, public sewerage or utility authorities, county improvement authorities, and other local government units.

Corporate Business Tax

Since 1998, the Corporate Business Tax (CBT) has been apportioned to provide \$5 million dollars annually for watershed management purposes. Governor Whitman allocated an additional \$3 million dollars in FY 2000 funds for the Watershed Program. This additional allocation is allowing watershed management planning to begin all the remaining watershed management areas of the state.

The CBT monies are used to run the Watershed Program, and are also used as grants for specific projects such as stream bank restoration and other Department NPS projects. Each year, a portion of the funds allocated to NJDEP goes to the NJ Department of Agriculture for the implementation of Best Management Practices for nonpoint source (NPS) pollution under the Conservation Cost Share/EQIP program described below. These uses serve to match the 319(h) funds received.

State Conservation Cost Share/Environmental Quality Incentive Program

The USDA Natural Resources Conservation Service and the NJ Department of Agriculture and other members of the New Jersey Conservation Partnership implement a significant grant program to fund conservation practices on farmland. In the recent past over \$5,000,000

has been made available for agricultural best management practice implementation. The New Jersey Ranking System under which state and federal agriculture nonpoint source abatement projects are funded for the 2000 EQIP program has been appended.

Overall, livestock operations are automatically a high priority in the state, consistent with national objectives, and receive approximately 50% of the funding and associated technical assistance. These are mostly made up of dairy operations. Cropland operations with critical conditions relating to soil erosion, pest management, and nutrient management are also targeted. NJ DEP watershed staffs from the respective state regions participate in farm ranking meetings, presenting information relating to Watershed Restoration Action Strategies and impaired surface water quality. This information contributes to the final ranking decisions.

The USDA Natural Resources Conservation Service and the other member agencies of the New Jersey Conservation Partnership have developed two ranking systems for prioritization of agricultural operations requesting federal or state cost share assistance.

The EQIP Environmental Risk Analysis is designed to be the 'first-cut' evaluation to efficiently determine which agricultural operations should be considered for Environmental Quality Incentives Program or state financial and technical assistance.

The New Jersey Ranking System, 2000 EQIP Program is designed to provide field personnel adequate criteria for evaluating and ranking agricultural operations that pass the aforementioned Risk Analysis.

Coastal Nonpoint Source Grant 6217

According to NOAA/OCRM Guidance provided to NJDEP for application of funds for the 19th Year CZM Grant (October 1, 1999 through September 30, 2000):

"6217 funds are to be used to address conditions placed on program approval, including the development of necessary information (e.g. legal opinions) to apply the recently issued administrative changes for the coastal nonpoint program. Activities could include developing statutory and regulatory changes, developing technical reference or best management practices manuals to meet conditions on management measures, and completing development of the five year implementation plans and fifteen year program strategies outlines in the Administrative Changes." NJDEP is funding projects in accordance with this guidance with the approximately \$300,000 allocated in the previous two funding cycles.

Consistency with Federal Lands and Activities

Federal lands within New Jersey consist of recreational areas, such as historical sites or parks, and non-recreation areas, such as military installations. NJDEP works in close partnership with EPA to upgrade and improve the Nonpoint Source Programs. The State's wetlands program is one of the few in the nation that has assumed Section 404 of the Clean Water Act. Federal partners involved in the NPS process include the US Fish and Wildlife, EPA, and NRCS.

The NJDEP is closely involved with the Natural Resources Conservation Service (NRCS) in addressing nonpoint source issues in order to assess best management practices both for agricultural and non-agricultural activities. The NRCS has been a partner in the development of a Conservation Reserve Enhancement Program throughout the state. In addition, the NJDEP coordinates with NRCS to obtain input in the development of regulations that would impact farmland. Currently, NJDEP are involved in partnerships with NRCS in the implementation of the following NPS programs:

Conservation Reserve Enhancement Program (CREP)

The Department is developing a proposal which would provide for the allocation of funds for conservation practices which include grassed and forested buffers along state waters on agricultural lands.

Conservation Reserve Program (CRP)

CRP is designed to provide technical and financial assistance to farmers/producers to address the agricultural impacts on water quality and to maintain and improve wildlife habitats. Practices included in this program include the implementation of grassed buffer strips, riparian forested buffers, and wildlife habitat restoration.

Environmental Quality Incentive Program (EQIP)

EQIP is designed to provide technical, financial and educational assistance to farmers/producers for conservation practices that address natural resource protection, sod waterways, sediment, erosion or water control structures, animal waste control facilities and forest/tree plantations.

Conservation Cost Sharing Program (CCSP)

CCSP is a conservation program that is integrated with the federal Environmental Quality Incentives Program (EQIP). Like EQIP, this program provides technical, financial and educational assistance to producers for the prevention and control of nonpoint source pollution. This program focuses on livestock management and soil erosion and sediment control practices.

Wetlands Reserve Program (WRP)

WRP is designed to address the restoration of previously farmed wetlands. Easements are purchased for a 10 year, 30 year or permanent duration.

Inconsistencies with the State's NPS Program

Identification of inconsistencies within Federal lands with the State's NPS program are performed in two manners: monitoring and reports of citizens/partners. The state performs monitoring of approximately 800 sites in streams throughout New Jersey, which is sampled once every five years. The results of the sampling serve as an indicator of possible nonpoint source problems. The citizens and partners within the watersheds are an important factor in determining nonpoint source concerns, and New Jersey is providing tools to allow residents to further assist in our assessment of streams, such as BATS, RATS, and CATS. Local residents or organizations that inform the Department of their concerns typically identify non-point source and stormwater issues. The combination of monitoring and the assistance of our partners serve to address the consistency of Federal lands with the State's NPS program objectives.

Currently, the NJDEP is actively involved in an Environmental Work Group with EPA and the Department of Defense. The DEP/EPA/DoD Environmental Work Group was established in 1996 to meet quarterly in an "environmental round table" type setting in which the Department of Defense (DoD) installations can regularly meet with state regulators to discuss issues, concerns, emerging environmental requirements, training opportunities. If inconsistencies with the State's NPS program are identified within federal lands, the State of New Jersey will coordinate with the individual military site to coordinate compliance in the following manner:

- NJDEP coordinates with Federal agencies to establish consistency with the State NPS program.
- Identified NPS problems on federal lands are addressed through coordination with the appropriate federal agency.
- Where appropriate, NJDEP will seek the assistance of EPA to resolve the NPS issue through memoranda of agreement or other means.
- NJDEP will work with federal agencies to promote consistent activities and programs.

Chapter 4: Implementing Solutions

Five-year action plans for priority nonpoint source pollution categories and issues will be implemented and revised as necessary to meet our 15-year Strategy and meet environmental goals and milestones established in the NJDEP Strategic Plan and PPA. Statewide and watershed as well as preventive and reactive approaches are included under most source categories and issues. Whether a NPS is from a potential or existing source or needs to be addressed statewide or only within specific watersheds, the program components described in chapter two apply.

To illustrate how each 5-year plan relates to environmental goals and milestones from the NJDEP Strategic Plan (and Chapter One of this plan), relevant goals and milestones are included by title in the tables. Goal/milestone/objective titles in the 5-year plan tables refer to specific goals and milestones as follows:

Clean and Plentiful Water Goal: New Jersey's rivers, lakes and coastal waters will be fishable, swimmable and support healthy ecosystems. Surface and ground water will be clean sources of water. Every person in New Jersey will have safe drinking water. Adequate quantities of surface and ground water will be available for all needed uses.

Nontidal Freshwater Rivers and Streams Aquatic Life Designated Use Milestone: By 2005, 50% of assessed non-tidal river miles will support healthy, sustainable, biological communities.

Recreational Designated Use Objective: Maintain and improve the current number and quality of suitable lake, ocean, and bay bathing beaches in NJ.

Recreational Designated use Milestone: By 2005, 100% of New Jersey's coastal recreational beach waters will be safe for swimming.

Shellfish Consumption Designated Use Milestone: By 2005, 90% of New Jersey's classified waters will provide shellfish that are safe to harvest.

Freshwater Lakes, Lake Eutrophication Milestone or Objective: not developed

Healthy Ecosystem Goal: The health, diversity and integrity New Jersey's ecosystems will be restored, protected, enhanced and sustained.

Wetland Milestone: By 2005, there will be a net increase in wetland acreage and quality.

Headwaters and Riparian Corridors Objective: Maintain and restore vegetative bank cover and buffers adjacent to headwaters and stream corridors by 2005.

Forest Resource Objective: Maintain and restore New Jersey's forest resources.

Soil Erosion Milestone: By 2005, all municipalities will adopt and implement ordinances to reduce erosion through the reduction of peak runoff rates after development, and set goal of total suspended solids for best management practices. By 2005, increase by 20% the amount of agricultural land that will have erosion rates with tolerable limits.

Open Space Milestone: 2008 will protect one million acres of open space.

Construction

Issue: Minimizing the creation of new nonpoint sources of pollution is a priority as it is economically and environmentally efficient considering the high costs of restoration to natural and financial resources.

Objective: Establish and implement statewide new development runoff standards for flood, erosion, recharge and water quality for all new development generating a minimum of one acre of disturbance.

Relevant Environmental Goals: Clean and Plentiful Water and Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

		Lead Group		Cooperating Groups	
Activities	Timeframe	NJDEP	NJDEP	NJDEP	Propose fall 1999
Propose and adopt Statewide Stormwater Management Rules (NJAC 7:8) with performance standards for new development and criteria for watershed management		NJDEP		NJDCA, NJDOT, NJDA, County Engineering Association, NJ Builders	Complete 2/00
Develop an interagency BMP manual for new development between DEP, DCA, DA, and DOT, including design with nature principles and construction erosion and sediment control and construction site chemical control measures to meet 6217 plan condition		NJDEP		NJDCA, NJDOT, NJDA, County Engineering Association	In rule changes for municipal permit program
Establish a recharge standard(s)					

Develop and implement the Municipal Stormwater Permitting Program under NJPDES	NJDEP	Municipalities, Watershed Groups	Based on Federal Rule adoption
Develop watershed based runoff performance standards to prevent degradation of specific waters	NJDEP, Watershed Groups	Watershed Committees and partners	Ongoing
Improve Soil Erosion and Sediment Control Program	NJDA	Regional SCDs, NJDEP	Ongoing
Make available Community Forest Information and encourage Municipal Tree Planning	NJDEP	Shade Tree Comm., Environmental Comm.	Ongoing
Develop industry recognition awards for excellence in SESC design, construction, post-construction stabilization, and long-term maintenance	NJDA, NJASCD, NJDEP	Industrial Associations, NJBA, Municipal Eng.	Ongoing

Urban Runoff

Issue: Nonpoint sources of pollution currently cause significant water resource degradation.

Objective: Minimize impacts of existing NPS on water resources.

Relevant Environmental Goals: Clean and Plentiful Water and Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Activities

Timeframe

Lead Group Cooperating Groups

Activities	Lead Group	Cooperating Groups
1. Develop and implement Municipal Stormwater Permitting Program under NJPDES with source controls, education, and identification of illicit storm sewer line connections	NJDEP	Local and Regional Entities, Leg. Of Muns.
2. Develop mechanisms to maintain and retrofit as necessary existing urban stormwater systems	NJDEP	Local and regional entities
3. Permit existing facilities presently exempt under ISTE A	NJDEP	NJDOT, Local and Regional entities
4. Implement other 5 year action plans e.g. stream corridor protection, septic system management, reforestation		Local and regional agencies, Environmental Comm. Watershed Groups
5. Identify nonpoint source and stormwater sources which are	NJDEP	Watershed Groups,
		Ongoing

the primary cause of a designated use impairment for priority funding		locals	
6. Facilitate local and regional management structure for urban runoff including authority for stormwater utilities	NJDEP, NJ Legislature	Watershed Partners	Ongoing
7. Support UCAP program	NJDEP, NJDA	Urban entities	Ongoing
8. Encourage and facilitate development of Regional Stormwater Management Plans	NJDEP	NJBuilders Assoc., Office State Planning, Watershed Groups, Local and Regional Partners	Ongoing
9. Encourage redevelopment and infill through recommended bmps, education and regulatory incentives	Office State Planning	NJDEP, Local and Regional Entities	Ongoing
10. Coordinate nonpoint source program and stormwater management with the combine sewer overflow program.	NJDEP	Local and regional entities, Sewer Authorities	Ongoing

Total Maximum Daily Loads

Issue:

Objective: Complete and implement NPS component of the NJ TMDL strategy

Relevant Environmental Goals:

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Headwaters and riparian corridors

Soil erosion

Activities

Timeframe

Lead Group

Cooperating Groups

Develop nonpoint source load allocations or other management strategies for 303d listed pollutants on a watershed or statewide basis: bacteria, phosphorus (sedimentation, temperature, and metals).	NJDEP,	Watershed Groups	8- year schedule in EPA/NJDEP MOA
Identify NPS loads and reduction opportunities through watershed management process and regional stormwater management plans.	NJDEP,	Watershed Groups	8- year schedule in EPA/NJDEP MOA
Develop control strategies for NPS contributions.	NJDEP,	Watershed Groups	8- year schedule in EPA/NJDEP MOA
Develop preventive TMDLs for unimpaired waters for nonpoint sources and implement preventive strategies as resources allow.	NJDEP	Watershed Groups	By 2010 for each Watershed Management Area

Stream Corridor Protection/Hydromodification

Issue: Stream corridor protection including prevention of physical modifications to a stream is a priority as recent research has shown that protection of riparian corridors on streams can to a certain extent minimize the negative impacts of increased impervious cover on water resources.

Objective: Prevent destruction of riparian corridors and restore those identified as necessary to support a healthy ecosystem.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

		Lead Group	Cooperating Groups
1. Develop an assessment methodology (ecological indices) to determine nonpoint source pollution and stormwater runoff impacts on water quality and riparian and instream habitat	NJDEP	USGS, USEPA	Ongoing
2. Identify and implement priority stream bank restoration projects through Watershed Restoration Action Strategies	NJDEP	NJ Forestry Assoc., SCDs	Ongoing
3. Provide technical and financial assistance for projects to stabilize eroding streambanks and shorelines	NJDEP, NRCS, NJDA	SCDs	Ongoing
4. Develop stream corridor protection guidelines that protect riparian buffer areas implementable through NJDEP rules (Watershed, Wetlands, Stream Encroachment), watershed management plans and local ordinances	NJDEP	Local and Regional Entities, Community Forest Council	

5. Prepare, develop and implement Community Forestry Plans including strategies to control and mitigate runoff through retention of forests, tree planting and stream corridor restoration.	NJDEP, NJ Forest Service, Local entities	Community Forest Council	Ongoing
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Land Preservation

Issue: The most effective method of NPS pollution and stormwater runoff control is prevention. The ultimate preventive technique is open space preservation and acquisition.

Objective: Work with other agencies and entities to preserve land to prevent and limit impacts of NPS.

Relevant Environmental Goals: Clean and Plentiful Water and Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

Lead Group Cooperating Groups

1. Identify land acquisition for nonpoint source pollution abatement and stormwater management as an eligible activity/project for funding under the NJ – CWSRF.	NJDEP	NJ local and regional governments, conservation organizations, private landowners, NJDA	2001
2. The development of local open space preservation plans will be encouraged as a part of the watershed management planning process, municipal tree plans, Green Acres and Farmland Preservation.	NJDEP, Green Acres Program	Local Entities, Watershed Groups, Community Forestry Council	Ongoing

3. Local and regional governments will be encouraged to adopt and implement open space tax via public referendum to finance a land preservation program and to use the full array of land preservation techniques available including fee simple, easement and development rights purchase, donations and zoning.	NJDEP, Green Acres Program	NJ local and regional governments, conservation organizations, NJDA	Ongoing
4. Local governments will be encouraged to seek technical assistance from Green Acres and apply for Planning Incentive funding.	NJDEP, Green Acres Program		2000
5. Conservation organizations will be encouraged to preserve lands that achieve nonpoint source goals and to work with local governments on land preservation projects.	Conservation Organ. NJDEP, Green Acres Program	Local and Regional Entities	Ongoing
6. Develop methods to prioritize land preservation based on potential/existing NPS pollution.	NJDEP	NJ local Governments, Conservation Organizations, Watershed Groups	Ongoing
7. Work with the Green Acres program on projects of mutual interest.	NJDEP	Watershed Management, Green Acres	Ongoing
8. Continue conservation easements on forested lands enrolled in farmland assessment or stewardship programs.		Forest Stewardship Committee	Ongoing
9. Garden State Preservation Trust Act will fund the preservation of 1,000,000 acres of farmland and open space by 2008	NJDEP, Green Acres Program NJDA	farmers	2008

10. Continue and expand support for private landowner stewardship programs	NJDEP	NJ Forestry Association, NJ Stewardship Committee	Ongoing
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Septic System Management

Issue: The NJDEP Strategic Plan has identified septic management as a critical function to be developed in the effort to control NPS.

Objective: Prevent and manage NPS pollution from new and existing septic systems from causing violations of surface and ground water quality standards.

Relevant Environmental Goals: Clean and Plentiful Water

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Activities

Timeframe

Lead Group Cooperating Groups

1. Develop, propose and adopt amendments to Subsurface Disposal System rules and Watershed Management Rules	NJDEP	Public Advisory Committee	Watershed Management Rules 2000
2. Develop and implement septic management districts for control of NPS from potential new septic systems	NJDEP, Watershed Groups	NJDEP, Watershed Groups, local and regional governments	Ongoing

			and Health Dept.	
3. Identify alternative systems that can be utilized to replace failing systems where sewers are not feasible or appropriate.	NJDEP		Office of Innovative Technology	Ongoing
4. Identify areas where higher levels of treatment would be required due to the environmentally sensitive nature of the receiving waters	NJDEP		Watershed Groups Local and regional entities.	Ongoing
5. Identify appropriate locations and densities for septic systems based on recharge rates and impacts to ground water	NJDEP, NJGS		Watershed Management Groups, local and regional entities	Ongoing
6. Encourage septic system use be determine through adoption of local ordinances based on appropriate location and densities identified in 5.	Local Governments		Watershed Management Groups, NJDEP	Ongoing
7. Investigate methods of ensuring adequate maintenance	NJDEP		Watershed Groups, local regional entities	Ongoing
8. Investigate the use of loans to fund retrofit of private septic	NJDEP			Ongoing

Forests

Issue: The Clean Water Action Plan: “Restoring and Protecting Americas Waters” repeatedly states that the health of many streams and watersheds is directly tied to forests. Forests increase resiliency of watersheds through watershed storage, soil protection, moderation of water yields, and filtering processes. An important finding of a May 1998, USGS publication on “Relation of Benthic Macroinvertebrate Community Impairment to Basin Characteristics in New Jersey Streams” is: The best predictor of the presence of unimpaired benthic community was the total area of forested land located upstream from a sampling site. The better the quality and composition of these forested lands the better the effects on water quality.

Objective: Maximize preservation of forested lands, especially in headwaters areas, next to stream, and in high-slope areas.

Relevant Environmental Goals: Clean and Plentiful Water and Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses
 Lake eutrophication
 Shellfish consumption
 Headwaters and riparian corridors
 Forests
 Soil erosion
 Open Space

Activities

Timeframe

Lead Group Cooperating Groups

1. Expand private landowner forest stewardship, especially large continuous blocks essential for water quality protection, restoration and management of streamside forests	NJDEP NJ Forest Service	NJ Forest Association NJ Stewardship Council State Plan, Municipal Gov.	Ongoing
2. Address water quality issues through community forestry programs.	NJDEP (NJ Forest Service)	Community Forest Council, County Planning Boards	Ongoing
3. Develop an ecological land type model of New Jersey's forest resources for regional planning purposes.	NJDEP (NJ Forest	Community Forest Council, County	Ongoing

	Service)	Planning Boards	
4. Demonstrate the usefulness of the ecological land type model in the management of New Jersey's forest resources at Watershed Management Area level planning.	NJDEP (NJ Forest Service)	State Plan, local and regional gov., watershed groups	Ongoing
5. Grow and distribute tree seedlings and wetland plants for reforestation, streamside reforestation and educational purposes.	NJDEP (NJ Forest Service)	Private Nurseries NJ Stewardship Comm NRCS	Ongoing
6. Expand the NJ Forest Service's forest education program to communities, private landowners and the general public.	NJDEP	Project Learning Tree Extension Service	Ongoing
7. Demonstrate forestry best management practices on State land.	NJDEP	Forestry Steering Comm Extension Service	Ongoing
8. Encourage proper wood lot management through local ordinances	NJDEP, Local and Regional Entities	Extension Service	Ongoing

Agriculture

Issue: to strengthen the focus and performance of the existing agricultural NPS control program.

The intent of this strategy is to provide a unified framework for agencies and partners to use in New Jersey agricultural NPS pollution assessment, treatment planning, plan implementation, and project evaluation. This strategy is intended to be consistent with the Conservation Partnership Mutual Agreement.

Objective: Ensure that no agricultural operation is a significant NPS contributor, through the use of voluntary programs backed by regulatory authorities wherever possible.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

	Lead Group			Cooperating Groups	
	(SSCC-NJDA) USDA-(NRCS); (SCDs); NJDEP	USDI-(USGS); Rutgers Cooperative Extension (RCE), NJ Farm Bureau, Watershed Groups, local officials	MOA or Legal Opinion by 12/99 Ongoing		
1. Through a Memorandum of Agreement between NJDEP and NJDA, develop a results based management system to determine success of agricultural bmps and adjust agricultural NPS treatment and prevention strategy according to results. Include prioritization of watersheds, identification of watershed specific water quality objectives for agricultural best management practices and development of a methodology for planning resource management systems to treat existing agricultural NPS problems and prevent future impacts. Ensure ability to implement ag bmps to meet 6217 management measure condition through MOA or legal opinion on back up authority.					
2. Coordinate and prioritize financial assistance programs for	(SSCC-NJDA)	USDI-(USGS);	Ongoing		

agricultural producers concentrating on documented agricultural related use impairments.	USDA- (NRCS); (SCDs); NJDEP	Rutgers Cooperative Extension (RCE), NJ Farm Bureau, Watershed Groups, local officials	
3. Develop resource management systems for specific agricultural operations. Resource management systems shall be developed using the NRCS Field Office Technical Guide and the NJDA Agricultural BMP manual. Systems developed shall place emphasis on soil erosion control, soil health, organic waste management, nutrient management, pest management, irrigation water management, and riparian corridor enhancement. This includes implementation of the conservation provisions of the USDA 1985 FSA, 1990 FACTA, and 1996 FAIRA, consistent with the 1995 Section 6217 CZARA Plan for New Jersey. After development, <u>implement resource management systems (RMS)</u> .	(SSCC-NJDA) USDA- (NRCS); (SCDs); NJDEP (SSCC-NJDA) USDA- (NRCS); (SCDs); NJDEP	USDI-(USGS); Rutgers Cooperative Extension (RCE), NJ Farm Bureau, Watershed Groups, local officials	Ongoing
4. Develop and implement New Jersey Animal Feeding Operations Strategy for Confined Animal Feeding Operations and Animal Feeding Operations.	(SSCC-NJDA) USDA- (NRCS); (SCDs); NJDEP	USDI-(USGS); Rutgers Cooperative Extension (RCE), NJ Farm Bureau, Watershed Groups, local officials	2000
5. Develop an agricultural industry awards program for excellence in agricultural BMP design, implementation, maintenance	(SSCC-NJDA) USDA- (NRCS); (SCDs); NJDEP	USDI-(USGS); Rutgers Cooperative Extension (RCE), NJ Farm Bureau, Watershed Groups, local officials	Ongoing
6. Improve access to funding	(SSCC-NJDA) USDA-	USDI-(USGS); Rutgers Cooperative	Ongoing

	(NRCS); (SCDs); NJDEP	Extension (RCE), NJ Farm Bureau, Watershed Groups, local officials
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Marinas and recreational boating

Issue: Nonpoint sources of pollution currently cause significant water resource degradation.

Objective: Ensure that marinas are not significant NPS contributors, and that boaters do not cause significant, aggregate impacts on water quality, shoreline erosion and aquatic vegetation.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems

Relevant Milestones: Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Activities

Timeframe

	Lead Group	Cooperating Groups
1. Designate estuarine and lake areas as no discharge zones	NJDEP	Watershed Groups
2. Implement measures to eliminate NPS from boat cleaning	NJDEP	Watershed Groups, Marinas, Boat Owners
3. Evaluate the impact of boating on shoreline erosion and aquatic vegetation and develop/implement controls as necessary	NJDEP	Ongoing

Education and Outreach

Issue: Educating citizens and others about nonpoint point source pollution is essential for building public support for program implementation.

Objective: Create public support and action by all levels of society by education and outreach activities.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

Lead Group Cooperating Groups

Improve the quality of watershed messages presented at natural resource centers statewide.	NJDEP	County and Watershed Environ. Centers SCDs	Ongoing
Educate local land use decision-makers on the impact of urbanization/sprawl on water resources and the economics through such techniques as the Nonpoint Source Education for Municipal Officials approach (NEMO)	NJDEP, OSP, Regional Environmental Groups	Local and Regional Government, Watershed Groups	Ongoing
Initiate nonpoint source and stormwater management education and outreach through watershed management planning and groups	NJDEP, Watershed Groups	Local and Regional entities, environmental groups, schools, local clubs, business associations	Ongoing

Program Efficiency

Issue: With limited resources and competing public interests, nonpoint source pollution control projects and strategies need to be as focused and effective as possible.

Objective: Ensure that effective nonpoint source controls are being implemented through periodic assessment of resource use.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

Lead Group Cooperating Groups

1. Coordinate with partners including private sector	NJDEP, NJDA, NJDCA, USEPA, NRCs, USGS	Business associations, private land owners, local and regional governments	Ongoing
2. Review and ensure consistency of relevant Federal and State programs with Nonpoint Source Pollution control.	NJDEP, NJDA	USEPA, USDA – NRCs, USGS, Military Bases, NOAA	Ongoing
3. Ensure information exchange is available.	NJDEP, ENDEX		Ongoing
4. Maintain partner involvement through NPS Advisory Committee	NJDEP	NPS Advisory Committee	

5. Coordinate between various NJDEP programs – monitoring, assessment, planning, permitting, financing	NJDEP		Ongoing
6. Evaluate success of previous grant activities	NJDEP		2000
Establish program evaluation process through environmental indicators and NEPPs	NJDEP	USEPA, Watershed Groups	Ongoing

Nonpoint Source Assessment

Issue: To date, statewide water resource monitoring and assessment in NJ has effectively characterized ambient biological and chemical water quality, however, a systematic approach to assessing nonpoint source pollution and stormwater runoff impacts has not been developed nor implemented.

Objective: Improve water resource assessment methods and more efficiently identify specific sources and relative contributions of nonpoint source pollution and stormwater runoff impacts.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

		Lead Group	Cooperating Groups	
1. Develop and implement improved nonpoint source assessment process.	NJDEP	USGS, NRCS, SCDs, Watershed Groups	Ongoing	
2. Assess New Jersey watersheds for location, extent, and causes of historical and existing NPS pollution.	NJDEP	USGS, NRCS, SCDs, Watershed Groups	Ongoing	
3. Identify New Jersey watersheds having potential impairment due to NPS pollution through land use, water quality monitoring, and experiential data.	NJDEP	USGS, NRCS, SCDs, Watershed Groups	Ongoing	
4. Assess effectiveness of NPS management strategies and	NJDEP	USGS, NRCS, SCDs,	Ongoing	

specific best management practices.			Watershed Groups	
5. Identify, improve and/or develop new indicators of nonpoint source and stormwater impacts on water resource and ecological health.	NJDEP		USGS, NRCS, SCDs, Watershed Groups	Ongoing

Funding

Issue: Projects should be prioritized for nonpoint source control grants based on preventing nonpoint source pollution in unimpaired waters and restoring waters impaired primarily by nonpoint sources. Nonpoint source control grants should implement nonpoint source control plans developed as a part of watershed management plans.

Objective: Fund nonpoint source strategies and projects that will result in prevention or improvement in water resource health.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

Lead Group Cooperating Groups

1. Target NPS grants on waters impaired or threatened by nonpoint sources.	NJDEP, NJDA, NRCS	Watershed Groups, Local and regional entities, nonprofits	Ongoing
2. Develop and implement a tracking system for grants	NJDEP		2000
3. Investigate legal authority for stormwater utilities	NJDEP	Watershed Partners	2000
4. Investigate long-term NPS control costs	NJDEP, USEPA	Clean Water Needs Survey, NPS Subcommittee	Ongoing
5. Sources of funds			

• NJ Environmental Infrastructure Financing Program				
• Drinking Water State Revolving Fund				
• Clean Water Act Section 319 Nonpoint Grants				
• TEA-21 (Transportation Efficiency Action for the 21 st Century)				
• New Jersey Corporate Business Tax – 5 million per year for watershed management program				
• Coastal Zone Management Section 6217 Nonpoint Source Program				
• Agriculture Nonpoint Source Grants EQIP, SCS				
• Garden State Preservation Act				
• Brownfield and Natural Damages funds				
• Clean Water Act Section 106 funds				
• Clean Water Act Section 604b planning grants				
• Clean Communities Grants				
• Private funds				
• CEHA				
• Office of Local Environmental Services Grants				

Land Use Planning

Issue: Modifications in land cover and increases in impervious surfaces cause significant impacts to our water resources.
Objective: Create, distribute and encourage use of land use planning methods and tools which protect environmentally sensitive areas and minimize impacts.

Relevant Environmental Goals: Clean and Plentiful Water, Healthy Ecosystems, Open Space

Relevant Milestones: Nontidal Freshwater rivers and streams aquatic designated use

Maintain and improve recreational designated uses

Lake eutrophication

Coastal water recreational designated use

Shellfish consumption

Wetlands

Headwaters and riparian corridors

Forests

Soil erosion

Open Space

Activities

Timeframe

Lead Group Cooperating Groups

1. Implement nonpoint source and stormwater management controls through NJDEP Land Use Regulation Program Rules and Permits, Watershed Rules	NJDEP		Ongoing
2. Implement policies consistent with the State Development and Redevelopment plan in NJDEP rules as legal authority allows.	NJDEP	Office of State Planning	Ongoing
3. Develop funding priorities for land use planning and nonpoint source controls in unimpaired waters	NJDEP	Watershed Groups, NPS Advisory Committee	For FY 2001 319 grant process

